DAVID SHEPHERD WILDLIFE FOUNDATION

Teacher Guidance

The Web Of Life: Painted Dog Conservation



Image credit: William Fortescue

The Art of Survival: FIGHT • PROTECT • ENGAGE

Learning Objectives

Students will understand:

- Food chains and webs include producers (plants), primary (herbivores) and secondary consumers (carnivores)
- Changes in biotic (food availability, new predators, poaching) and abiotic factors (water and fire) can cause changes in the population of painted dogs in an ecosystem.

Proposed Activity

1

Introduction | *15 minutes*

Explain where Zimbabwe is, where Hwange national park is in Zimbabwe and the main habitats (teak forest and savannah) within it. Importance of painted dog populations. There is one page of maps and information with a few quality pictures in the student workbook. Students summarise the information down into three key things they think are important on their own white board. Teacher led discussion on what the students have said. Students record their three key facts in their own workbook, based on what they have written and the conversations they have heard.

If you want a bit more background on savannah, the introduction of this paper is very helpful: https://www.sciencedirect.com/science/article/abs/pii/S1877343510000096

2

Food Webs/Chains definitions | *10 minutes*

A two-page spread in the workbook is a partially constructed food web for Hwange national park. It includes one of the top carnivores (painted dog), one scavenger (hyena) and one herbivore and blanks for up to 15 other animals. Explain the concept of a food web using the existing example in the workbook - define Food chain/ Food web /Producer / Herbivore / Carnivore / Scavenger. In groups of two: produce a sentence using each of the words and the animals already in the food web and practice them together.

Model the first answer: Eg the 'Teak tree is a producer as it makes its own food' Expect repetition and children hearing the words repeatedly.

3

Food Webs/ chains | *15 minutes*

Explain that they will now have to finish the food web in their book using the film of Hwange that they will watch. Working individually in pencil in their workbook - add the animals and plants in the right places. Some blanks have a picture that needs a name and producer / herbivore / carnivore. Some have no picture but have carnivore / herbivore / producer, some are completely blank.

Use the guidance to point out the animals on the film as they arise and ask them relevant questions about them (what they are eating, eyes on the side of the head, teeth, claws etc). Once complete, the teacher puts up a completed version of the web for the children to view and they make amendments.

4 **What if |** *25 minutes*

The children are organised into groups of 3 students. Each group receives an envelope with an event that might happen in the park and some background on why it happens. They will need to work out what effect might be for the cause they have been given on the painted dog population using their food web. 5 minutes per cause.

5 Young people should write a simple cause and effect statement into the workbook (cause: bad drought means that elephants die- effect more food for hyenas and lions. More of these predators outcompete the painted dogs). After each activity – PDC staff member - 1 minute to camera about what would probably happen. Children rate their answer on a scale of 1 - 5 (1 = not right 5 = completely right) and add their scores to the workbook. Older children may get through all 5, younger children may do one or two depending on literacy levels.

I. 80 snares are placed into the park

II. There is a bad drought and quite a few elephants die

III. There is a forest fire in one area - the trees have been burnt down to grow a crop.

IV. A new pride of lions moves into the area

V. There is an outbreak of rinderpest in the Zebra and Kudu population which has an 80-90% death rate

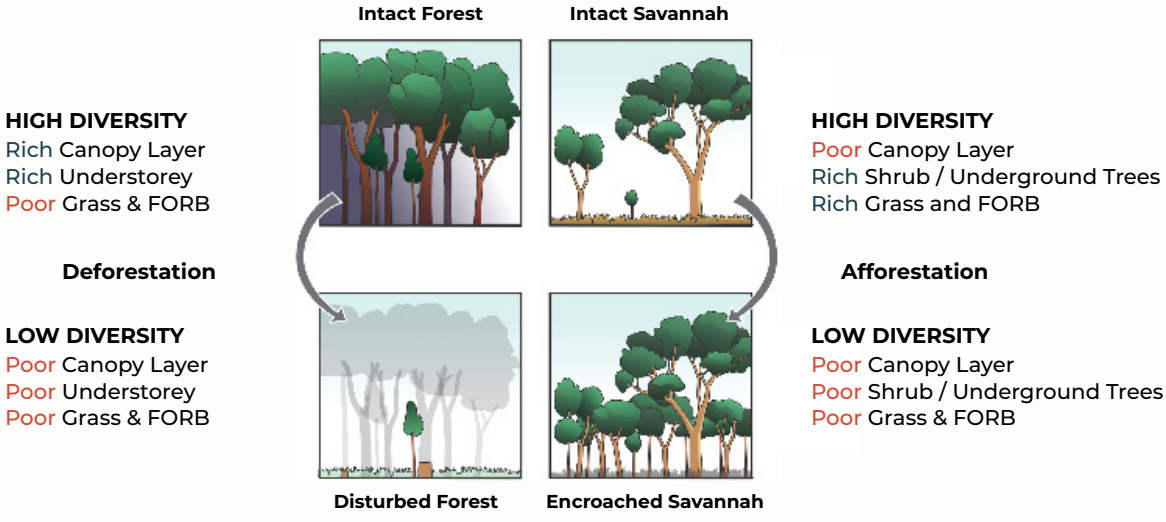
Below are some model answers based in the views on rangers that work in Hwange National Park. There is no right answer - although some are more correct that others.

What Happened: A Fire in the Savannah

Fire is a natural occurrence in the forest. It stops the trees taking over the savanna completely. Since the prey species of painted dogs generally eat the grasses, a small, contained fire that opens the grasslands may be good for the painted dogs. More food for the antelope, more food for the painted dogs. Numbers may go up.

However, a big fire during the dry season with much hotter temperatures can burn the trees and the roots of the grasses meaning they do not regrow. Less food for the painted dogs' prey will mean less painted dogs.

This diagram gives a useful summary of the relationship between the grasses and the trees in a Savannah:



What Happened: There is a drought, and many elephants die in the park.

There are about 50,000 elephants in Hwange National Park and they each drink as much as 200 litres of water per day. The park often receives 1200mm of rain in the wet season. In 2023, it was as low as 360mm. The waterholes in the park are fed by pumps from boreholes dug into the ground. Even they are struggling to supply all the water needed by the wildlife. It is possible that hundreds of elephants can die of drought in a bad year.

What impact does this have on the painted dogs? Not quite what you might think. More food for the lions and hyenas means a surge in their numbers. Since lions and hyenas are known for stealing the food of painted dogs, there will be greater interspecific competition. Painted dog populations, finding it harder to find food, will fall.

What Happened: Rangers arrest poachers and destroy hundreds of snares in the National Park.

In 2022 Painted Dog Conservation arrested two poachers and destroyed 319 snares. Poachers are not trying to kill painted dogs. They want to catch and either eat or sell 'bushmeat'. These are often the antelope species that painted dogs' prey on. Less prey species will mean less painted dogs. PDC collected data on what the average painted dog pack eats:

Prey Species	Value	Percentage
Bushbuck	3	5%
Common Duiker	20	29%
Impala	24	35%
Kudu	17	25%
Steenbok	4	6%
Total	**68**	**100%**

If there are more Kudu and Impala in the savannah, the painted dogs with find it easier to hunt and their numbers will go up. The amount of prey is a big issue for all carnivores in areas where poaching is common.

Painted dogs also get caught in snares - some of them many times a year. They can be badly hurt or killed by a snare. PDC scouts spend a great deal of time releasing painted dogs from snares. Fewer snares will mean the population of dogs will increase.

6 **Exit Ticket**

Answer the question - based on what we did today - if there is one thing we could do to stop the extinction of the painted dogs - what would you do?

Animal count data (approximate):

Animal	Picture of the Animal	Herbivore, Carnivore, Omnivore, Scavenger?	Animal Count
Vulture		Carnivore, Scavenger	1
Giraffe		Herbivore	2
Impala		Herbivore	3
Warthog		Omnivore, occasional scavenger	4
Baboon		Omnivore	4
Impala		Herbivore	4
Elephant		Herbivore	5
Zebra		Herbivore	6
Wildebeest		Herbivore	7
Painted dog		Carnivore	4
Elephant		Herbivore	5

Animal	Picture of the Animal	Herbivore, Carnivore, Omnivore, Scavenger?	Animal Count
Lion		Carnivore	5
Baboon		Omnivore	4
Elephant		Herbivore	28
Crocodile		Carnivore	1
Kudu		Herbivore	1
Hyena		Carnivore, Scavenger	1
Elephant		Herbivore	9
Leopard		Carnivore	1
Painted dog		Carnivore	7

Let's look at the data you collected.

Now you have collected the data how confident are you that the numbers of animals you recorded is correct? Circle a number based on what you think

1 2 3 4 5

Not Confident Very Confident

Circle the number closest to what you feel.

1. Use your tally to record the total numbers for each category below:

Scavenger	Total Omnivore	Total Carnivore	Total Herbivore

2. Calculate the % of each category based on the total number of animals you saw.

Scavenger	Total Omnivore	Total Carnivore	Total Herbivore

	Food Chain 1	Food Chain 2	Food Chain 3	Food Chain 4
Secondary Consumer	Lion	Leopard	Painted dog	Lion
Primary Consumer	Giraffe	Impala	Kudu	Elephant
	Producer	Acacia trees	Savannah grass	Teak trees

Background information
African Savannah Ecosystem Food Web

Producers

Grasses
- Tall grasses and grasslands
- Hyparrhenia rufa (yellow thatching grasses
- Themeda triandra (red cat grass)
- Buffalo grass (cenhrus ciliaris)
- Panicum maximum (bush grass)
- Heteropagon contartus (spear grass)

Acacia Trees
- Vechellia tortilis (umbrella thorn)
- Senegalia Senegal (gum Arabic tree)
- Vechellia negrescens (knob thorn)
- Vechellia karoo (sweet thorn)

Bushes
- Shrubs and thorny plants
- Diospyros mespiliforms (jackal berry)
- Ziziphus mucronate (buffalo thorn)
- Baobab trees - Adonsinia digitata (baobab)

Decomposers / scavengers

Vultures
- African white backed vulture (gyps africanus)
- Lappet faced vulture (torgos tracheliotus)

Hyenas -spotted hyena (Crocuta Crocuta)

Blow flies
- House flies

Beetles
- Dung beetles
- Carrion beetles

Bacteria
- Soil bacteria
- Gut bacteria

Primary Consumers

Antelopes
Impala - Aepyceros melampus
Kudu - Tragelaphus strepsiceros)
Nyala - (Tragelaphus angasii)
Zebras - Equus quagga and Equus Burchil)
Wildebeest - connochoetes taurinus)
Giraffes - (Giraffa Camelopardalis)
Elephants - (Loxodonta Africana)
Hippopotamus - (hippopotamus amphibius)

Secondary Consumers

Lions - Panthera Leo
Leopards - Panthera pardus
Cheetahs - Acinonyx Jubatus
Hyenas - Crocuta Crocuta
Wild Hunting dogs -Lycaon pictus
Nile crocodile - crocodylus niloticus
Mongoose - Mungos mungo

Food Chain Examples

Grasses----Kudu----- Painted dog -----Hyena (scavenger)

Grasses -----Impala-----Lion----vulture (decomposer)

Bushes-----elephants-----crocodiles----flies (decomposers)

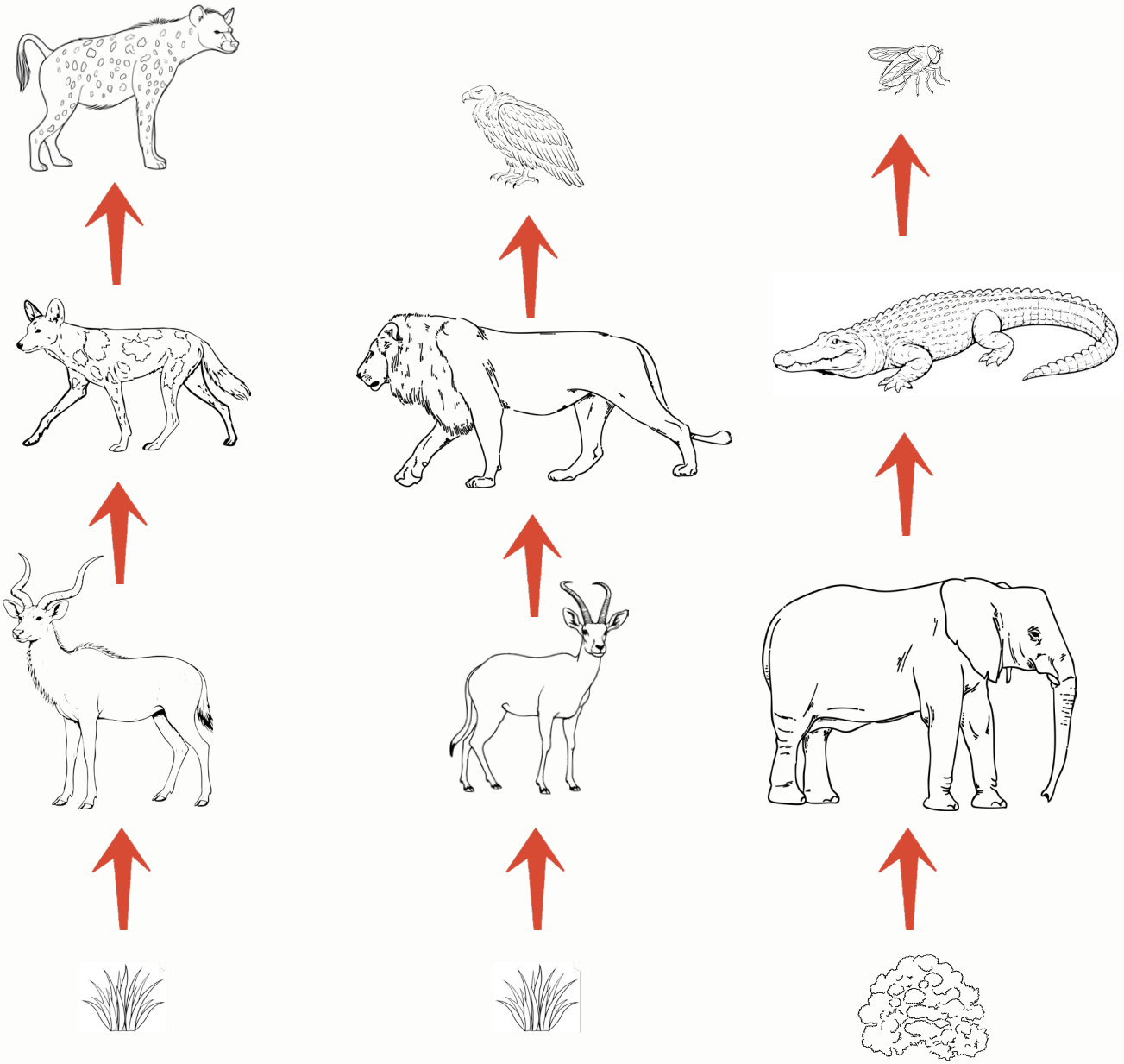


Image credit: Nicholas Dyer



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DAVID SHEPHERD WILDLIFE FOUNDATION 2025

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This project was managed by Coastal schools partnership and generously funded by Garfield Weston and the Fonthill Foundation.

This project was developed and led by David Shepherd Wildlife Foundation (DSWF), who collated and designed the resources in close collaboration with our field partners to ensure the activity books and teacher's guidance were rooted in real-life conservation challenges. Delivered with the support of the Coastal Schools Partnership and generously funded by the Garfield Weston and Fonthill Foundations, the project brings authentic conservation stories into the classroom in an engaging and accessible way.